

ABSTRACT OF THE DISCLOSURE

A lead-free solder alloy consisting essentially of, by weight, 3.0% to 3.5% silver, greater than 1% to about 15% copper, the balance tin and incidental impurities, and having an effective melting range of about 215°C to about 222°C. The solder alloy is noneutectic, and therefore characterized by solidus and liquidus temperatures, the former being in a range of about 215°C to about 218°C, while the latter is about 290°C or more. However, the melting mechanism exhibited by the alloy is such that the alloy is substantially all melted and does not exhibit a "mushy zone" above the effective melting range, enabling the alloy to behave similarly to the SnAgCu eutectic alloy.